EXECUTIVE SUMMARY

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Introduction and need

Background

As part of the New South Wales Government's Rail Clearways Program, the Transport Infrastructure Development Corporation (TIDC) proposes to construct two additional tracks alongside the existing dual track configuration between Kingsgrove and Revesby. This is known as quadruplication.

The Rail Clearways Program is designed to improve reliability and capacity on the metropolitan CityRail network by separating the existing 14 metropolitan routes into five independent routes, or clearways. Rail Clearways projects aim to remove bottlenecks and junctions, reduce congestion and delays and allow the introduction of simpler timetables.

The Kingsgrove to Revesby Quadruplication Project (referred to in the Environmental Assessment as the Proposal) together with work being undertaken at Revesby Station as part of the Revesby Turnback Project will deliver operational benefits on Clearway 3 (Campbelltown Express) and Clearway 4 (Airport and South). The location of the Proposal is shown on **Figure S1**.

The Proposal forms part of the Kingsgrove to Revesby Upgrading project under the *State Environmental Planning Policy 63 – Major Transport Projects* (SEPP 63). The other upgrading works described under SEPP 63 refer to construction currently being undertaken by TIDC as part of the Revesby Turnback Project. This was approved under Part 5 of the *Environmental Planning and Assessment Act 1979* (the Act) in March 2006.

On 20 February 2007, the Director-General of the Department of Planning accepted the Project Application for the Proposal under Part 3A of the Act and issued his requirements.

Accordingly, the environmental assessment of the Proposal has been undertaken to satisfy planning and approval requirements of Part 3A of the Act, which outlines the key steps for assessment and approval of major infrastructure and other projects in NSW. Cumulative impacts of the Revesby Turnback Project together with other projects were also considered as a part of this process.

Role of TIDC

TIDC is a statutory State-owned corporation under the *Transport Administration Act 1988* with the principal function of developing major transport infrastructure projects on behalf of the NSW Government. TIDC has been commissioned by the NSW Government to deliver the projects included in the Rail Clearways Program.

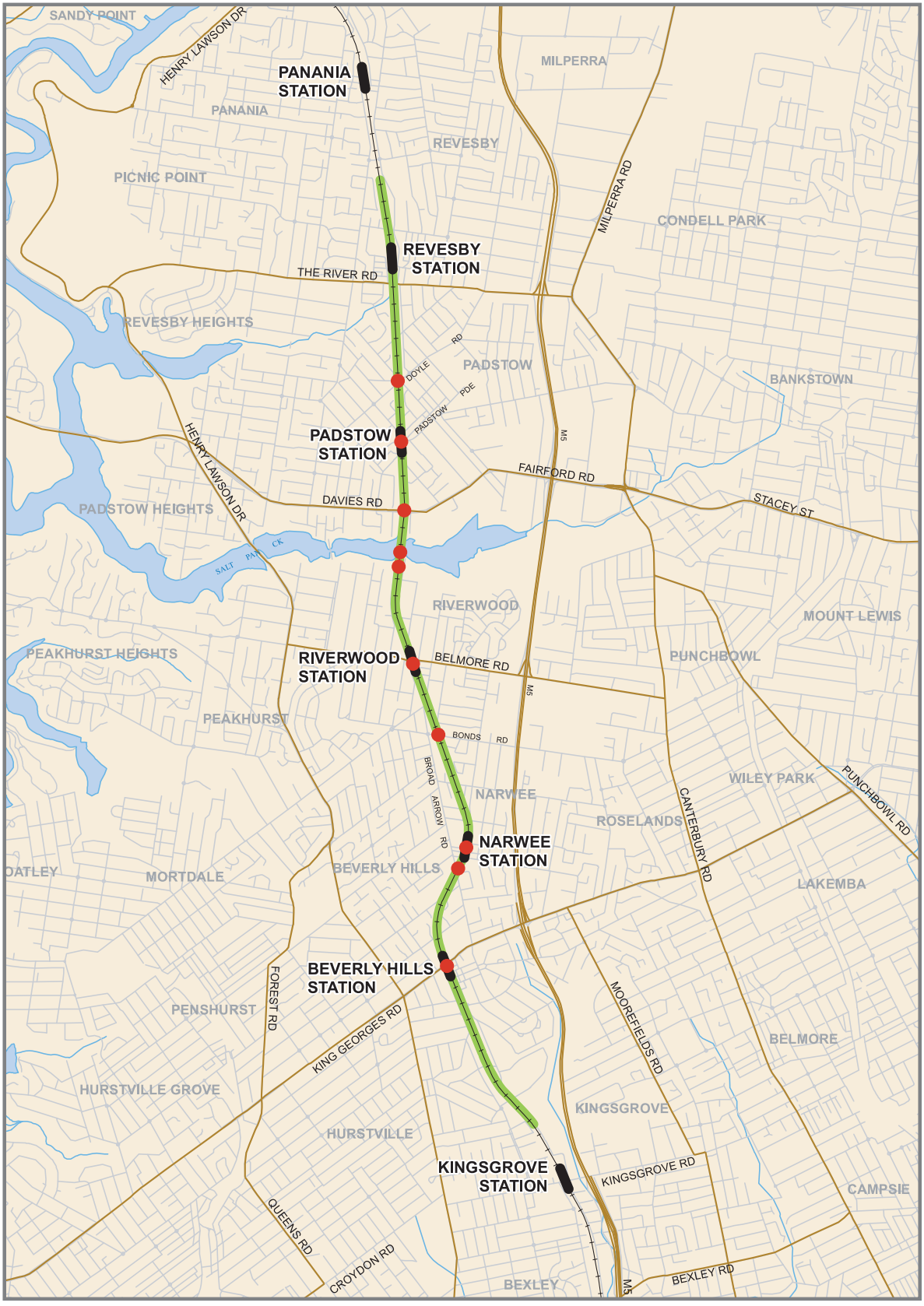

Figure S.1 **Regional location**

Need and benefits of the Proposal

The existing configuration between Wolli Creek Junction and Kingsgrove comprises four tracks that converge to two tracks between Kingsgrove and Beverly Hills Stations. Existing running patterns on the East Hills Line include:

- all stations services generally running from East Hills via the Airport line to the City Circle; and
- peak hour express services from Campbelltown via Sydenham.

The East Hills Line is intermittently used for freight services during RailCorp possession operations on other designated freight lines when maintenance may require short term closure.

Passenger services currently share the same two tracks between Kingsgrove and East Hills Stations. This constraint, combined with the high frequency of services and numerous stopping patterns, means that delays to one service often cause delays to subsequent services. In addition, the existing East Hills turnback is operating at capacity.

These limitations are compounded by increasing growth in patronage on express services, driven by population growth in the Campbelltown area and anticipated future growth in the south west.

Patronage forecasts for the East Hills Line expect passenger demand during the morning and evening peaks to grow from 11.1 million passenger journeys in 2005-06 to 14.8 million passenger journeys in 2020-21 (RailCorp 2006), a total increase of 33 percent.

The provision of two additional tracks between Kingsgrove and Revesby would allow the separation of express and local services. The Proposal, in conjunction with the new turnback facility being constructed as part of the Revesby Turnback Project would provide the following benefits:

- Increased capacity to run additional all stops and express services on the East Hills Line including provision for future services from the South West Rail Link.
- Improved service reliability by separating all stops and express services. Reliability will be improved as delays to one service will not affect other services.
- Improved journey times on trips between Macarthur and the CBD.
- Modification of existing passenger facilities at Revesby station to provide a high level of customer service compatible with the improved services.
- Support for State economic development by the provision of improved transport infrastructure.
- Improved public transport access for existing and future residents of the south west region.

- Support for planned urban development through the provision of good access to reliable public transport services.

- Reduced reliance on motor vehicles, reducing road congestion, accidents, noise/air pollution, greenhouse gas emissions and energy consumption.

Overall, the key objectives of the Proposal are:

- Improving operational capacity, efficiency and reliability.

- Improving the attractiveness of commuter rail transport.

- Achieving a high standard of environmental and economic outcomes.

More information on the need and benefits of the Proposal is provided in **Chapter 4**.

Community and stakeholder involvement

Consultation with government stakeholders and the local communities along the rail corridor was undertaken prior to and during the preparation of the Environmental Assessment. The purpose of this consultation was to inform stakeholders and the community about the Proposal and the environmental assessment process and to identify environmental and community issues for consideration during the design of the Proposal and the planning approval process.

The following community engagement activities undertaken include:

- Provision of contact points to distribute information and receive feedback including:
  - project information line;
  - fax number;
  - email address; and
  - updates on the TIDC website.

- Establishment of a database to manage and record stakeholder feedback.

- Distribution of a newsletter in May 2007 to 16,000 key stakeholders.

- Direct mail to approximately 500 residents adjoining the rail corridor between Kingsgrove and Revesby.

- Community information sessions held at Beverly Hills and Revesby on 31 May and 2 June 2007 respectively.

- Distribution of 3,000 newsletters at Kingsgrove, Beverly Hills, Narwee, Riverwood, Padstow and Revesby Stations on 24 May 2007.

- Sixteen meetings and briefings with business owners and representatives of various social, education and commercial facilities between April and October 2007.

Key issues raised by the community and stakeholders during this consultation are analysed in **Chapter 3**. The most frequently raised issues related to visual impacts and urban design, noise and vibration (during construction and operation), traffic, transport, parking and access, property impacts and the need for an effective consultation process.

The Proposal will be publicly exhibited for 30 days during which formal written submissions to the Department of Planning will be invited. These submissions will be analysed and addressed in a Submissions Report, which will respond to the issues raised and identify any changes to the Proposal or mitigation measures required.

A series of community information sessions and further meetings with stakeholders are proposed during the exhibition period. These are listed in **Section 3.3**.

Guidelines for making a submission are provided in **Section 1.2.3**.

Description of the Proposal

The Proposal would provide two additional railway tracks between Kingsgrove and Revesby Stations passing Beverly Hills, Narwee, Riverwood and Padstow Stations. It also includes an upgrade of Revesby Station.

The Proposal comprises:

- Construction of approximately 7.1 kilometres of Up Main rail tracks, serving trains to the City, approximately 7.7 kilometres of Down Main rail tracks, serving trains from the City and approximately 600 metres of realigned existing track between Kingsgrove and Revesby.

- Cutting and embankment formation widening, maintenance access, retaining walls, slope stabilisation, stormwater drainage and culvert extensions.

- Construction of noise barriers.

- Revesby Station works including:
  - extension of the footbridge and overhead concourse;
  - construction of booking office and automatic ticket machine, station staff amenities and public toilets;
  - upgrade of easy access facilities including installation of a lift and stairs;
  - realignment of Blamey Street and associated landscape works;
  - modifications to communications, lighting and power, security and fencing;
  - associated infrastructure and rail and station systems/services.

- Bridgeworks including:
  - four underbridges (where trains pass over the bridge) over two stormwater canals east of Beverly Hills Station;
  - modifications to King Georges Road overbridge (where bridges pass over the rail corridor) at Beverly Hills Station;
  - two underbridges over Broad Arrow Road, Narwee;
  - underbridge and lengthening of the pedestrian underpass at Narwee Station;

  - two underbridges at Bonds Road, Riverwood;
  - modifications to Belmore Road overbridge at Riverwood Station;
  - underbridge over Webb Street, Riverwood;
  - underbridge over Salt Pan Creek, Riverwood;
  - modifications to Davies Road overbridge, Padstow;
  - modifications to Memorial Drive overbridge, Padstow Station;
  - modifications to Doyle Road overbridge, Padstow.

- Relocation and replacement of existing signalling and electrical infrastructure including signalling supplies and signal huts to suit new track and modifications to overhead wiring and signalling.

- Utilities adjustment and protection.

- Protection of the existing ethane gas pipeline.

- Commuter car parking adjustments at Beverly Hills, Narwee, Padstow and Revesby Stations.

- RailCorp lease adjustments where required within and adjacent to the corridor and property acquisition at Narwee and at Blamey Street, Revesby.

- Landscape works.

- Temporary and ancillary works.

- All supporting rail systems.

The construction period is expected to be up to 32 months from mid-2008 to the end of 2010.

Process of approval

As required by the Act, an Environmental Assessment of the Proposal has been undertaken to satisfy Part 3A of the Act and the requirements of the Director-General of the Department of Planning.

Key steps in this process are summarised in **Figure S2.**

TIDC is the proponent for the Proposal and the Minister for Planning is the approval authority under Part 3A.

At the conclusion of the public exhibition of the Environmental Assessment, all submissions received by the Department of Planning will be sent to TIDC, reviewed and a Submissions Report prepared. The report will include consideration of:

- the Environmental Assessment;

- all submissions and responses to the issues raised;

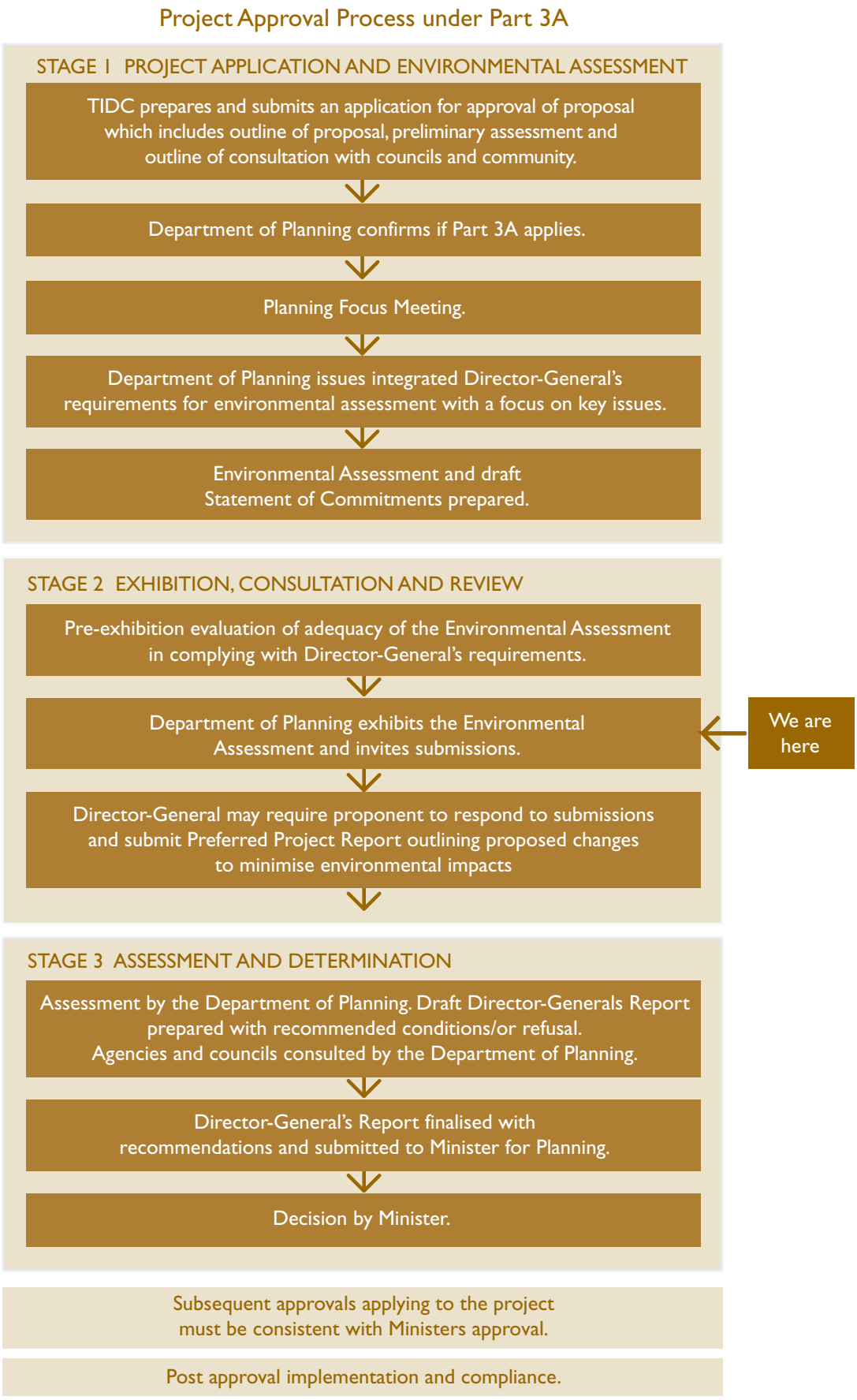

Figure S.2 **Planning and approval process**

- any new information concerning the Proposal;
- the draft Statement of Commitments;
- any modifications to the Proposal; and
- a summary of mitigation measures and other commitments made should the Proposal proceed.

The Environmental Assessment and Submissions Report will be sent, together with advice on any adopted modifications to the Proposal and the Statement of Commitments, to the Department of Planning and approval of the Minister for Planning sought. If significant changes are proposed, the Department of Planning may require a Preferred Project Report to be prepared.

The Department of Planning will examine all reports submitted and prepare its own Director-General's report to the Minister for Planning. Acting on that report, the Minister for Planning will decide whether to approve the Proposal. The Minister for Planning may attach conditions to the approval or elect not to grant the approval.

Should the Proposal be approved, TIDC would ensure that the detailed design and construction process that would follow would allow for further input from public authorities and the community.

Environmental assessment

Existing environment

The Proposal is located in the existing rail corridor between Kingsgrove and Revesby within an urbanised environment in Sydney's metropolitan south west. The Proposal starts at approximately 550 metres east of Beverly Hills Station and concludes approximately 700 metres beyond Revesby Station, adjacent to Amour Park. It passes through Hurstville, Canterbury and Bankstown local government areas.

The land along the rail corridor is gently undulating and free from any topographical features of interest. The corridor passes through predominantly low density residential areas accommodating mainly single lot housing development typical of extensive parts of the Sydney suburbs.

A number of educational and other public facilities are located adjacent to the rail corridor. These include Beverly Hills High School, Narwee High School, St Joseph's School and Church at Riverwood and the Southside Montessori School near Salt Pan Creek. The latter is located on land within the rail corridor, which is leased from RailCorp.

Each of the stations is located within or adjacent to a commercial centre. These vary considerably in size and range of facilities available. Revesby is the largest centre along this part of the Rail Corridor with the station currently undergoing redevelopment as a part of the Revesby Turnback Project. The Revesby Workers Club, adjacent to the station is developing proposals for significant expansion of its facilities.

The existing environment between Kingsgrove and Revesby supports very limited remnant vegetation and fauna habitat. Vegetation within the rail corridor has been largely cleared and is dominated by exotic grasses and weed species. Some small fragments of remnant and regrowth vegetation are present comprising native trees and shrubs. These are generally located on the margins of the corridor and on top of steep cuttings. An area of mangroves along Salt Pan Creek would be removed. These would be replaced as part of the Biodiversity Offset Strategy.

Further details on the existing environment are described in **Chapters 11** to **15**.

Environmental impacts and management

The Environmental Assessment identifies potential environmental impacts of the Proposal and outlines the mitigation measures that address and minimise their effects.

A summary of impacts and references to where they are discussed in detail along with management commitments and processes that have been proposed to avoid, remedy or mitigate potential impacts are set out in **Table S1**.

A full list of impacts and proposed mitigation strategies and commitments is provided in **Chapters 11** to **17** and in the draft Statement of Commitments in **Appendix C**.

Table S1 Summary of key potential impacts and management measures of the Proposal

Key issue	Identified key potential impacts	Key management commitments
Traffic and access	The rail corridor crosses two major roads (King Georges Road and Davies Road) and several other local roads providing access. All the bridges would be subject to complete reconstruction or major modification to accommodate the two additional tracks. A strategic network model and intersection analysis was carried out for each of the four proposed construction stages to determine the extent of diverted traffic associated with the specific road or bridge closures, and the cumulative effect of a number of road closures. The analysis indicated that the local roads could satisfactorily accommodate the diverted traffic during closures with intersections operating at acceptable levels. As some major construction works would be located at or adjacent to the stations, temporary access arrangements would be necessary to allow pedestrians to use the platforms. Bus routes serving the stations would also need to be amended during the construction stage.	Traffic Management Plans for each zone will be prepared in consultation with the RTA and relevant local councils. Traffic Management Plans will include consideration of cumulative impacts where feasible with other projects (including but not limited to Alfords Point Road and Cronulla Rail Duplication).

Key issue	Identified key potential impacts	Key management commitments
Commuter parking	The works associated with construction and operation of the Proposal would result in changes to and removal of some existing commuter parking at the following locations as a result of accommodating the new tracks and associated infrastructure: Beverly Hills (27 car spaces); Narwee (24 car spaces); Padstow (up to 92 car spaces); and Revesby (up to 83 car spaces)	Commuter parking at Beverly Hills, Narwee and Riverwood Stations would be modified/reconfigured resulting in no net loss of parking at these locations (subject to land owner agreement). Further investigation into options for replacement of commuter parking lost at Padstow would be undertaken in consultation with land owners to minimise the loss of commuter parking spaces. A commuter parking strategy is being prepared for Revesby Station by RailCorp, Ministry of Transport and Bankstown City Council as a part of commitments in accordance with the Urban Transport Statement. During construction there may be some temporary loss of commuter parking. A Traffic Management Plan would be developed to manage traffic and parking impacts during construction. Newsletters and other communication tools will be used to provide proactive, timely information to the community on any changes to commuter parking arrangements.
Construction noise and vibration	Noise and vibration from construction activities would have a temporary impact on residents adjacent to the corridor and for residents in streets used as haulage routes for construction materials.	Construction activities would be undertaken between 07.00 hours and 18.00 hours Monday to Friday, 08.00 hours to 13.00 hours Saturday with no work on Sundays or Public Holidays, except during track possessions for traffic management reasons and/or as otherwise agreed with the relevant authorities. Consultation with, and notification of, residents close to the works would be carried out before undertaking works that are audible at the nearest sensitive receiver outside approved construction hours. An Out-of-Hours Work Procedure would be implemented in accordance with the TIDC Construction Noise Strategy prior to works which would be audible at the nearest sensitive receivers being undertaken outside approved hours.

Key issue	Identified key potential impacts	Key management commitments
		Vibration impacts during construction would be minimised by the selection of the smallest suitable equipment and the implementation of a site specific Vibration Management Plan. Vibration impacts would be minimal during the operation of the Proposal. A Construction Environmental Management Plan would be developed to manage and minimise construction noise and vibration during construction. The plan would include details of construction hours, restrictions of high noise activities, commitments for community notification and plant and equipment placement and maintenance. It would be developed in accordance with the TIDC Construction Noise Strategy.
Operational noise	Adjacent to the railway corridor, residential and other sensitive receiver locations are currently exposed to noise emissions from existing rail operations. A number of major roads also run parallel to and/or intersect the railway corridor. Noise emissions from these roads contribute to increased background levels at nearby residential and other sensitive receiver locations.	Options available to minimise operational noise include source controls (including provision of concrete sleepers, ballast top bridges and continuously welded tracks), receiver measures (including noise barriers) and receiver controls (including building treatments such as double glazing and mechanical ventilation).
	A noise assessment was carried out to determine likely impacts during operation of the Proposal. The operational assessment was undertaken in accordance with Department of Environment and Climate Change Interim Guidelines for Assessment of Noise from Rail Infrastructure Projects (2007). Modelling shows 69 noise sensitive receiver locations where noise barriers are considered neither reasonable nor feasible.	The noise assessment for the Proposal has considered a combination of these controls with barriers as the main control of source noise. However, if any of the other solutions meet the same criteria (provide a similar acoustic reduction) and are reasonable and feasible they will be developed and further investigated during detailed design. A range of mitigation measures, including dwelling treatment would be implemented at those locations where barriers are not reasonable and feasible.

Key issue	Identified key potential impacts	Key management commitments
		Following completion of construction, operational noise monitoring would be undertaken to confirm compliance with the predicted noise levels identified in the Environmental Assessment. Should the results of monitoring show that the predicted noise levels are exceeded, further feasible and reasonable mitigation measures will be implemented in consultation with the affected property owners.
Heritage	No Aboriginal sites, places or objects were identified during the site survey. The Beverly Hills Station Group is listed on the State Heritage Register. The demolition and reconstruction of the southbound King Georges Road overbridge and the strengthening of the existing northbound overbridge would affect this item. Apart from work required at this station, the Proposal would have no impact on any significant item of heritage within the rail corridor.	Should presently unknown Aboriginal heritage items be uncovered, all works in the vicinity of the discovery will cease until Aboriginal Heritage specialist advice is obtained and contact made with the Local Aboriginal Land Council. A Heritage Management Plan would be developed to avoid impacts on built heritage during the construction works. All personnel working on site would receive training relating to the requirements of the Heritage Act 1977.
Visual impact	The most significant visual changes resulting from the Proposal would be related to enlarged bridges required to accommodate the additional tracks. The proposed noise barriers would be built on both sides of the rail corridor and may cause overshadowing in some locations. The visual and overshadowing changes would have the greatest impact on property owners whose property shares a boundary with the corridor.	Seven urban design principles have been established to guide the design and development of the Proposal. Community feedback on these principles will be sought during the Environmental Assessment exhibition period and the resulting principles would form part of the Urban Design Strategy. Consultation on the urban design of the noise barriers including the colour and finish (pattern) as well as associated landscaping species would be undertaken throughout the detailed design and construction stages of the Proposal with property owners located adjacent to proposed noise wall locations prior to construction. A targeted consultation program for property owners affected by overshadowing would be undertaken during the detailed design phase of the Proposal. Where technical constraints allow, adaptations to materials, positioning and height of the noise barrier would be discussed and feedback sought.

Key issue	Identified key potential impacts	Key management commitments
Land use and property	Most of the works required for the Proposal would be constructed within the rail corridor. However, some additional land may be required for construction. The railway corridor is owned by RailCorp. Some of the currently vacant land within the rail corridor is leased by RailCorp, including land for the Southside Montessori School and car parking facilities at a number of locations. The land outside the rail corridor is owned by a variety of public and private land owners. The adjacent main roads are owned by the RTA with local roads owned by the relevant Council. Adjustments to land and property resulting from the Proposal are: ▪ acquisition of small areas of land outside the rail corridor mainly to allow for modification of levels or minor works beyond the corridor; ▪ modification of land within the corridor either used for rail related uses but now required for the proposed works (mainly within car parks inside the corridor) or has been leased by RailCorp to other users; and ▪ temporary use of land outside the corridor for construction purposes, mainly Council-owned land adjacent to the rail corridor. There may be instances where property fences would need to be replaced with a retaining and/or noise wall where existing fences are located on or within the boundary of the rail corridor. These areas would be identified during detailed design and residents notified prior to any works occurring.	All property acquisitions will be negotiated in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*. All land outside of the rail corridor to be leased for temporary construction activities will be rehabilitated in accordance with agreements with landowners to at least pre-construction condition. Notification to property owners whose fences may need to be replaced with a retaining or noise wall will include details on the timing of construction and the process that will be used to assess individual impacts including the need for any rehabilitation works.
Ethane Gas pipeline	A major high-pressure ethane gas pipeline traverses the rail corridor, with crossings at a number of locations. This pipeline extends from Moomba in South Australia to the Orica site in Botany and was commissioned in 1996.	An Ethane Gas Pipeline Management Plan will be developed to detail management measures and procedures to ensure that the pipeline is comprehensively protected during both the construction and operation phases of the Proposal.
Salt Pan Creek	Construction of the bridge across Salt Pan Creek would result in the removal of a number of mangrove trees. This loss would represent a small proportion of the mangroves that now inhabit both sides of the creek.	A Construction Environmental Management Plan will be developed to manage and minimise impacts on flora and fauna during the construction stage of the works.

Key issue	Identified key potential impacts	Key management commitments
		Mangroves removed along both sides of Salt Pan Creek will be replaced at a ratio of two plants for every one removed. Areas where the removal of other vegetation is necessary to provide construction access will be reinstated following construction. Construction methods will be developed to minimise impacts on upstream flooding, fish passage, siltation and aquatic flora.
Flora and fauna	The widening of the rail tracks and recontouring of the embankments and cuts would result in the removal of some small areas of remnant and regrowth vegetation comprising native trees and shrubs. However, significant impacts on threatened flora species or the habitats of threatened fauna species are not predicted to occur.	A Construction Environmental Management Plan will be developed to manage and minimise impacts on flora and fauna during the construction stage of the works. A Biodiversity Offset Strategy will be developed and implemented to contribute to the long term conservation and enhancement of local biodiversity values.

A Construction Environmental Management Plan would be developed prior to the start of construction to define the management measures required to achieve compliance with the specific environmental issues. This would include environmental protection practices, resources and sequence of activities required to comply with relevant environmental legislation and conditions of any applicable licenses, approvals and permits.

RailCorp would manage on-going environmental issues associated with operation and maintenance activities through its established environmental management system and standard operational procedures.

The Environmental Assessment identifies a range of measures to minimise and manage potential impacts. These commitments are detailed in **Chapters 11** to **17** as well as in the draft Statement of Commitments in **Appendix C**.

Justification and conclusions

The construction and operation of the Proposal would meet the objectives of the Rail Clearways Program. These have been developed to achieve improved reliability and efficiency of passenger services in the Sydney Metropolitan area. The Proposal would result in a range of economic, social and environmental benefits as outlined in the Environmental Assessment. Potential environmental impacts have been assessed and with the adoption of the proposed environmental management measures and safeguards included in the Proposal they can be effectively mitigated and managed.